

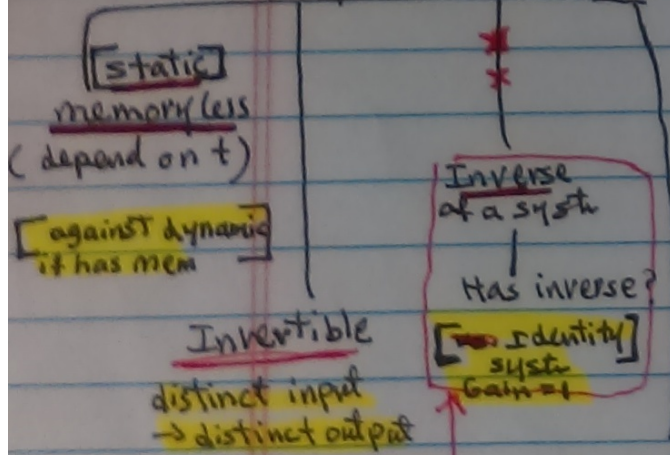
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Interconnected systems

$T_1 (T_2 [\cdot])$
series (cascaded inputs only)

parallel
 $T_1 [\cdot] + T_2 [\cdot]$
Inputs only

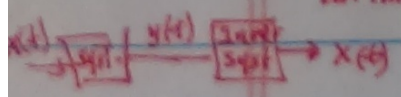
Properties



Feedback

$$Y(t) = T_2 [T_1 [X(t)] - T_3 [Y(t)]]$$

[with controller] Has a $Y(t)$ output term



Causal (nonanticipatory)

depend on t to t_0 only (not future)
[otherwise ideal time advance (cause & effect)]

stable (bounded) BIBO
[unstable/marginally]

Linear + Addition + Homogeneity
Superposition [else non-linear]

Time Invariant (or Fixed system)

input time shift \rightarrow output time shift
[else time varying]